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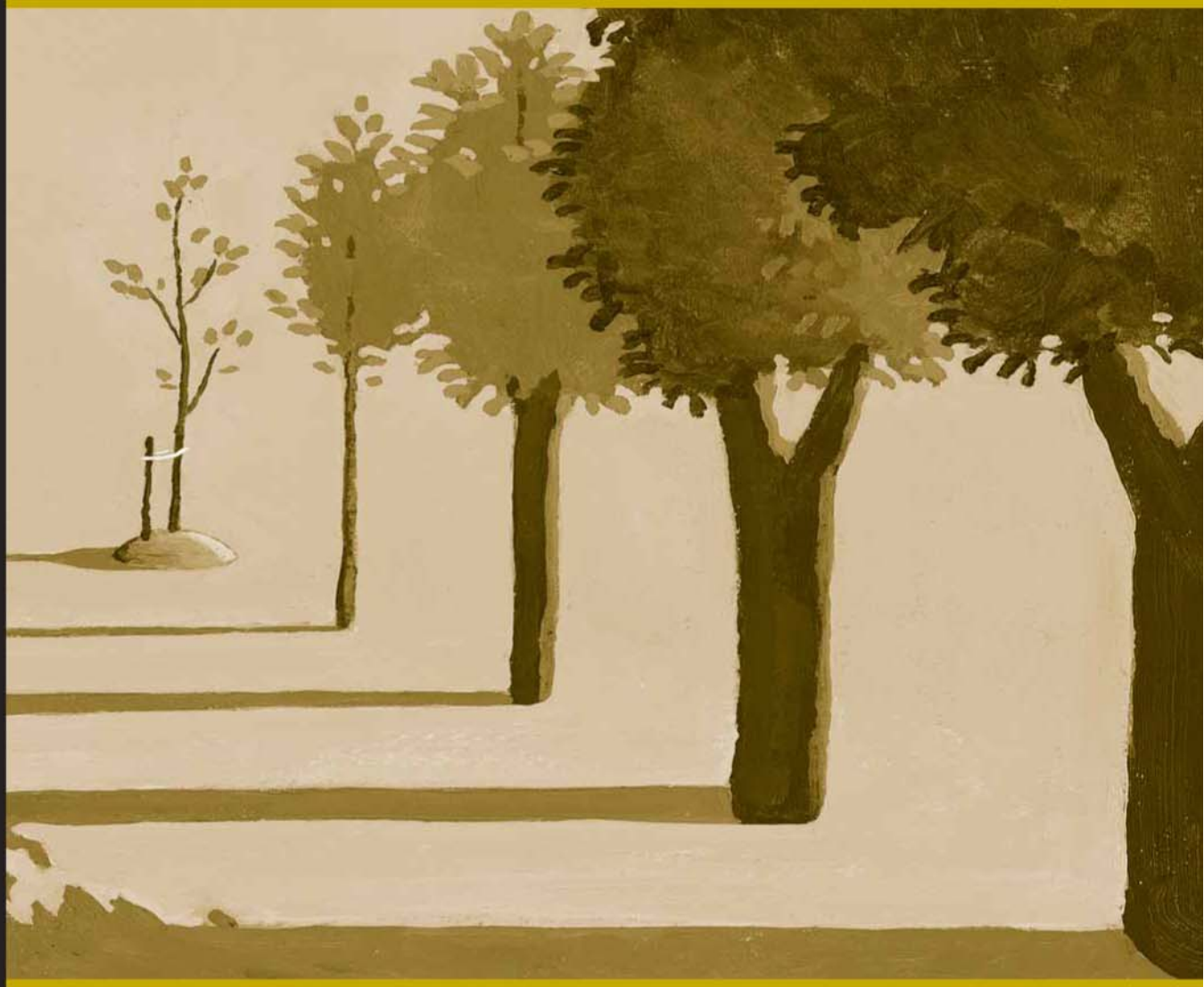

Will Employers Want Aging Boomers?

Gordon B.T. Mermin, Richard W. Johnson, and Eric J. Toder

July 2008

The Retirement Policy Program

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The Retirement Policy Program

A crosscutting team of Urban Institute experts in Social Security, labor markets, savings behavior, tax and budget policy, and micro-simulation modeling ponder the aging of American society.

The aging of America raises many questions about what's in store for future and current retirees and whether society can sustain current systems that support the retired population. Who will prosper? Who won't? Many good things are happening too, like longer life and better health. Although much of the baby boom generation will be better off than those retiring today, many face uncertain prospects. Especially vulnerable are divorced women, single mothers, never-married men, high school dropouts, and lower-income African-Americans and Hispanics. Even Social Security—which tends to equalize the distribution of retirement income by paying low-income people more then they put in and wealthier contributors less—may not make them financially secure.

Uncertainty about whether workers today are saving enough for retirement further complicates the outlook. New trends in employment, employer-sponsored pensions, and health insurance influence retirement decisions and financial security at older ages. And, the sheer number of reform proposals, such as personal retirement accounts to augment traditional Social Security or changes in the Medicare eligibility age, makes solid analyses imperative.

Urban Institute researchers assess how current retirement policies, demographic trends, and private sector practices influence older Americans' security and decision-making. Numerous studies and reports provide objective, nonpartisan guidance for policymakers.

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Abstract

Boomers will probably want to work longer than earlier cohorts, but their continued work requires that employers hire and retain them. Employers value older workers for their maturity, experience and work ethic, but worry about out of date skills and high costs. Slower overall labor supply growth may increase demand for older workers if employers can easily use older workers to do the work once done by younger workers. Future jobs will require less physical demands and more cognitive and interpersonal skills, trends that favor educated older workers, but job opportunities for less educated older workers may remain limited.

Executive Summary

As the baby boomers—the 77 million Americans born between 1946 and 1964—grow older, their retirement decisions will help shape the nation's economic future. If boomers work longer, the economy could produce more goods and services, boosting living standards for workers and generating additional tax revenue to fund promised benefits for retirees and other government programs. Many surveys find that boomers plan to work longer than recent retirees, but their opportunities will be limited if employers are unwilling to hire or retain them.

This report examines the current employer demand for older workers and explores how demand may be changing over time. It discusses the personal and social benefits of increased work by older adults, the reasons why boomers are likely to try to work longer than earlier generations, and whether employers appear to want older workers. The report also displays the occupations at which older workers are most likely to be employed today. Later sections of the report examine how changes in the nature of work, demands for different occupations, the characteristics of older workers, and overall labor force growth will affect the future demand for older workers. The report concludes with policy recommendations.

Job prospects for older adults today

Most employer surveys indicate that firms generally value older workers' knowledge and experience, reliability, and work ethic. These surveys also indicate, however, that employers often question older workers' creativity, flexibility, and willingness to learn new things. Overall, most employers appear to consider older workers to be at least as productive as younger workers, but many employers express concerns about the cost of employing older workers. Employers

also tend to view older professionals and managers more favorably than older rank-and file workers.

Although national employment and earnings statistics indicate that older workers generally fare at least as well as their younger counterparts, surveys indicate that many people believe that employers favor younger workers and that age discrimination is pervasive. Relatively few workers, however, report that they experienced age discrimination themselves. Quasi-experimental studies provide some evidence that older workers face discrimination. Also, employers are less likely to provide training to older workers than younger workers.

Like adults of all ages, older Americans work in a wide variety of occupations.

- 36 percent of workers age 65 or older are employed as managers or professionals;
- 17 percent work in service occupations;
- 15 percent work in sales;
- 14 percent work in office and administrative support occupations; and
- 17 percent work in blue collar occupations, including construction, factory, and transportation jobs.

Older workers are generally distributed across broad occupational groups in similar proportions as workers of all ages, except that younger adults are more likely to work in blue collar occupations than older adults and older adults are more likely to work in sales. Older workers are also more likely to be managers than younger workers.

The 30 occupations that employ the most adults age 65 or older account for nearly half (48 percent) of all employed older adults. The three occupations employing the largest numbers of older adults are retail salespersons, farmers and ranchers (agricultural management positions),

and the immediate supervisors and managers of retail sales workers. Nearly 7 percent of older workers work as retail salespersons or their immediate supervisors. About another 2 percent work as cashiers, 1 percent work as immediate supervisors of non-retail sales workers, and 1 percent work as sales representatives in wholesale and manufacturing endeavors. The top 30 occupations include nursing and home health aides, registered nurses, physicians and surgeons, and personal and home care aides, which together employ more than 4 percent of workers age 65 or older.

Many of these top occupations for older workers feature flexible work arrangements, which likely accounts for their popularity among older adults. Salespersons, for example, often work part time. Other occupations, including chief executives, professors, physicians, lawyers, judges and clergy, offer rewarding and intellectually stimulating work. Some of the most popular jobs, however, generally pay low wages and involve physically demanding work. These occupations include janitors and cleaners, home health and home care aides, maids and housekeepers, and laborers. Financial necessity, not the desire for intellectual stimulation or social networks, likely keeps workers at these jobs into old age.

Adults age 65 or older make up about 31 percent of all funeral service workers, the occupation with the highest share of older workers. Additionally, more than one in five workers employed as crossing guards, farmers and ranchers, and models, demonstrators, and product promoters are age 65 or older. Other occupations in which older adults make up more than 9 percent of the workforce include tax preparers, clergy, property managers, real estate brokers, and bus drivers.

Job prospects for older adults in the future

The changing nature of work and mounting demographic pressures could increase the demand for older workers in the future. Jobs are less physically demanding now than in the past and are less likely to entail difficult working conditions.

- Between 1971 and 2007 the share of jobs involving high physical demands (such as strength, bending, or reaction time) declined from 8.0 to 6.6 percent.
- Over the same period the share involving any physical demands (high physical demands or more moderate demands like standing, walking, and repetitive motion) declined from 54.2 to 44.9 percent.
- The proportion of jobs with difficult working conditions (such as outdoor work, high noise levels, and exposure to contaminants) fell from 39.8 to 29.8 percent.

While jobs have become less physically demanding over time, nonphysical demands have increased. Between 1971 and 2007 the share of jobs requiring high cognitive ability (such as reasoning, written expression, and decision making) and strong interpersonal skills grew from about one-quarter to more than one-third, a relative increase of over 35 percent. Over the same period the proportion of jobs involving high stress and requiring dealing with unpleasant people more than doubled.

The trend away from physical job demands to cognitive demands and stress is likely to continue. The 100 occupations that the U.S. Bureau of Labor Statistics predicts will grow the fastest over the next 10 years are far less physically demanding and far less likely to involve difficult working conditions than slower-growing jobs.

- Only 18 percent of fast-growing jobs require any physical demands, compared with 52 percent of other occupations.

Additionally, the fast-growing occupations impose more cognitive and other nonphysical demands, are more stressful, require more interpersonal skills, and are more likely to require the latest skills than slow growing occupations.

- High cognitive ability is very or extremely important for 57 percent of workers in fast-growing occupations, compared with 30 percent for workers in other occupations.

Ongoing shifts in the characteristics of older adults might also affect employer demand for older workers. As work has become more cognitively demanding, older adults have become better educated.

- Between 1971 and 2007, the share of adults ages 55 to 74 with a four-year college degree has increased from 9 to 27 percent.
- Projecting forward, educational attainment among adults of all ages will continue to increase, but at a much slower rate than over the past few decades.

Conclusions and policy recommendations

Despite the decline in physical job demands and older adults' rising educational attainment, the future demand for older workers remains uncertain. The increasing cognitive nature of work may exacerbate employer concerns about older workers' skills. An increased global labor supply may more than offset the increase in demand for older workers resulting from a projected slowdown in domestic prime-age labor force growth. Even if total demand for workers located in the United

States remains high, the increasing numbers of older workers may push down their wages and employment rates if employers do not see them as perfect substitutes for prime-age workers.

For the boomer cohorts, employment prospects might be especially grim for less-educated older workers. They are generally in worse health than their more educated counterparts and often work in more physically demanding jobs. The workplace trend towards greater cognitive demands works against adults with limited schooling, who may find it more difficult to update their knowledge and skills for a changing job market. The slowdown in U.S. labor force growth may not transfer into more demand for services of low-skilled older workers if employers are able to tap immigrants or overseas labor for similar work.

To promote employment at older ages, policymakers might consider the following steps to increase demand for older workers:

- Make Medicare the primary payer for workers with employer-provided health insurance.
- Reduce legal uncertainties surrounding formal phased retirement programs.
- Allow in-service distribution of defined benefit pensions at age 59 and one-half.
- Better target government training and employment services to older workers.
- Take steps to increase employer awareness of the value of older workers.

Beyond this, policymakers will have to confront the possibility that labor market developments could exacerbate income inequalities within the cohort of boomers as they reach retirement age. The evidence in this paper suggests that job growth for highly educated workers in occupations that require cognitive skills will remain strong. Consequently, the increased educational attainment of the baby boomer cohorts relative to earlier cohorts, combined with the

slowdown in overall labor force growth, could make them more attractive to employers than earlier cohorts of older workers, while prospects for less educated workers worsen. Even as more older workers delay retirement and contribute to the economy and tax base, others may become even more dependent on Social Security and other income-support programs.

Introduction

How long baby boomers remain in the labor force will help shape the economic consequences of an aging population. Population aging poses economic and fiscal challenges as the ratio of working taxpayers to older benefit recipients decreases. However, the economy could produce more goods and services if boomers worked longer, boosting living standards for workers and generating additional tax revenue to fund promised benefits for retirees and other government programs.

There are a number of reasons to believe that boomers will want to work longer. Health improvements and the declining prevalence of physically demanding jobs have made work at older ages more feasible for many people. Lower Social Security replacement rates and the trend away from traditional pensions and employer-provided retiree health insurance have made early retirement less affordable and increased the returns from additional years of work. Surveys suggest that boomers are increasingly concerned about their ability to afford retirement and that most intend to work in retirement (AARP 2003; MetLife Mature Market Institute 2005).

Even if boomers are willing to work longer, however, their opportunities will be limited if employers are unwilling to hire or retain them. Employers often say they value older workers' experience, maturity, and strong work ethic, but some express concern about their higher salaries and benefit costs, combined in the view of some with declining abilities or out-of-date skills. This report examines the current employer demand for older workers and explores how demand may be changing over time. It begins by displaying the occupations at which older workers are most likely to be employed today. The report then discusses the personal and social benefits of

increased work by older adults and the reasons why boomers are likely to try to work longer than earlier generations. Later sections of the report examine whether employers will want older workers and how changes in the nature of work, demands for different occupations, the characteristics of older workers, and overall labor force growth will affect the future demand for older workers. The report concludes with some policy recommendations.

Where Do Older Adults Work Today?

Like adults of all ages, older Americans work in a wide variety of occupations. About 36 percent of workers age 65 or older are employed as managers or professionals, 17 percent work in service occupations, 15 percent work in sales, and 14 percent work in office and administrative support occupations (table 1).[1] Another 17 percent work in blue collar occupations, including construction, factory, and transportation jobs. Older workers are generally distributed across broad occupational groups in similar proportions as workers of all ages, except that younger adults are more likely to work in blue collar occupations than older adults and older employees are more likely to work in sales. Older workers are also more likely to be managers than younger workers.

Table 2 reports the 30 occupations that employed the most adults age 65 or older between 2003 and 2007. These 30 occupations accounted for nearly half (48 percent) of all employed older adults, but only about one-third (36 percent) of all U.S. workers. The three occupations employing the largest numbers of older adults are retail salespersons, farmers and ranchers

[1] Estimates are based the 2003 and 2007 March Current Population Survey, conducted by the U.S. Census Bureau for the Bureau of Labor Statistics. We pooled data from five years so that we could obtain enough survey responses from older workers to generate reliable estimates.

Table 1. Occupational Distribution of the Workforce, 2003-2007

	No. of Employees Ages 65+	Total No. of Employees (all ages)	Percentage of U.S. Workers Ages 65+ in Occupation	Percentage of All U.S. Workers in Occupation (all ages)	Percentage of Occupation's Workforce Ages 65+
Management and Professional					
Management	736,331	14,749,952	14.2	10.2	5.0
Business and finance	211,887	5,928,122	4.1	4.1	3.6
Computer, mathematical, architecture, and engineering	123,472	5,967,037	2.4	4.1	2.1
Sciences (life, physical, and social)	39,274	1,374,341	0.8	1.0	2.9
Community and social services	96,834	2,189,476	1.9	1.5	4.4
Legal	63,523	1,579,723	1.2	1.1	4.0
Education, training, and library	259,907	8,299,948	5.0	5.8	3.1
Arts, design, entertainment, sports, and media	115,908	2,748,542	2.2	1.9	4.2
Healthcare (practioner and technical)	207,677	6,818,501	4.0	4.7	3.0
Total	*1,854,813*	*49,655,643*	*35.8*	*34.5*	*3.7*
Services					
Healthcare support	94,895	3,124,120	1.8	2.2	3.0
Protective service	114,433	2,876,231	2.2	2.0	4.0
Food preparation and serving related	199,216	7,711,553	3.8	5.4	2.6
Building and grounds cleaning and maintenance	253,735	5,249,800	4.9	3.6	4.8
Personal care and service	222,791	4,548,693	4.3	3.2	4.9
Total	*885,071*	*23,510,398*	*17.1*	*16.3*	*3.8*
Sales	793,658	16,606,959	15.3	11.5	4.8
Office and Administrative Support	722,260	19,930,655	13.9	13.8	3.6
Farming, Fishing, and Forestry	40,275	1,029,170	0.8	0.7	3.9
Blue Collar					
Construction and extraction	165,274	9,294,989	3.2	6.5	1.8
Installation, maintenance, repair	112,212	5,203,021	2.2	3.6	2.2
Production	260,613	9,866,033	5.0	6.9	2.6
Transportation and material moving	348,006	8,862,003	6.7	6.2	3.9
Total	*886,105*	*33,226,045*	*17.1*	*23.1*	*2.7*
All	5,182,182	143,958,870	100.0	100.0	3.6

Source: Authors' computations from the 2003-2007 March Current Population Survey.

Note: Estimates are annual averages over the period 2003 to 2007, and exclude the Armed Forces.

(agricultural management positions), and the immediate supervisors and managers of retail sales workers. Nearly 7 percent of older workers work as retail salespersons or their immediate supervisors. About another 2 percent work as cashiers, 1 percent work as immediate supervisors of non-retail sales workers, and 1 percent work as sales representatives in wholesale and manufacturing endeavors. Many older adults work in health care. The top 30 occupations include nursing and home health aides, registered nurses, physicians and surgeons, and personal and home care aides, which together employ more than 4 percent of workers age 65 or older. Several

Table 2. Thirty Occupations With Most Workers Ages 65 and Older, 2003-2007

Rank	Occupation	No. of Employees Ages 65+	Total No. of Employees (all ages)	Share of Occupation's Workforce Ages 65+	Share of U.S. Workers Ages 65+ in Occupation	Share of All U.S. Workers in Occupation (all ages)
1	Retail salespersons	181,559	3,301,071	5.5%	3.5%	2.3%
2	Farmers and ranchers	177,383	690,207	25.7%	3.4%	0.5%
3	First-line supervisors/managers of retail sales workers	164,507	3,427,223	4.8%	3.2%	2.4%
4	Janitors and building cleaners	146,364	2,152,407	6.8%	2.8%	1.5%
5	Driver/sales workers and truck drivers	139,902	3,412,238	4.1%	2.7%	2.4%
6	Secretaries and administrative assistants	139,829	3,585,371	3.9%	2.7%	2.5%
7	Cashiers	110,508	3,069,676	3.6%	2.1%	2.1%
8	Bookkeeping, accounting, and auditing clerks	108,798	1,511,078	7.2%	2.1%	1.0%
9	Real estate brokers and sales agents	92,465	973,320	9.5%	1.8%	0.7%
10	Chief executives	89,720	1,631,267	5.5%	1.7%	1.1%
11	Receptionists and information clerks	81,050	1,447,321	5.6%	1.6%	1.0%
12	Postsecondary teachers	79,723	1,226,502	6.5%	1.5%	0.9%
13	Property, real estate, and community association managers	69,557	610,149	11.4%	1.3%	0.4%
14	Nursing, psychiatric, and home health aides	69,396	1,927,664	3.6%	1.3%	1.3%
15	Security guards and gaming surveillance officers	68,145	862,590	7.9%	1.3%	0.6%
16	Accountants and auditors	66,098	1,786,433	3.7%	1.3%	1.2%
17	Child care workers	61,417	1,364,832	4.5%	1.2%	0.9%
18	Maids and housekeeping cleaners	60,323	1,402,860	4.3%	1.2%	1.0%
19	Elementary and middle school teachers	59,879	2,721,781	2.2%	1.2%	1.9%
20	Registered nurses	57,356	2,493,754	2.3%	1.1%	1.7%
21	Physicians and surgeons	56,264	803,765	7.0%	1.1%	0.6%
22	Lawyers, judges, magistrates, and other judicial workers	54,582	1,010,775	5.4%	1.1%	0.7%
23	Cooks	53,615	1,985,752	2.7%	1.0%	1.4%
24	Bus drivers	51,987	571,287	9.1%	1.0%	0.4%
25	Personal and home care aides	48,059	667,489	7.2%	0.9%	0.5%
26	First-line supervisors/managers of non-retail sales workers	47,204	1,388,354	3.4%	0.9%	1.0%
27	Clergy	46,724	409,856	11.4%	0.9%	0.3%
28	Stock clerks and order fillers	44,497	1,483,237	3.0%	0.9%	1.0%
29	Laborers and freight, stock, and material movers, hand	42,271	1,921,403	2.2%	0.8%	1.3%
30	Sales representatives, wholesale and manufacturing	40,732	1,404,566	2.9%	0.8%	1.0%
	30 Occupations with the most workers age 65+	2,509,914	51,244,229	4.9%	48.4%	35.6%
	All Other Occupations	2,672,268	92,714,641	2.9%	51.6%	64.4%
	Grand Total	5,182,182	143,958,870	3.6%	100.0%	100.0%

Source: Authors' computations from the 2003-2007 March Current Population Surveys.

Note: Estimates are annual averages over the period 2003 to 2007, excluding the Armed Forces. Rankings exclude miscellaneous occupations.

office-based occupations, including secretaries and administrative assistants, bookkeepers, receptionists, and accountants, employ many older adults. Nearly 2 percent of all employed

adults ages 65 and older work as chief executives, the tenth largest occupation among older workers, and 1.5 percent are university and college professors and instructors.

Many of these occupations feature flexible work arrangements, which likely accounts for their popularity among older adults. Salespersons, for example, often work part time. Other occupations, including chief executives, professors, physicians, lawyers, judges and clergy, offer rewarding and intellectually stimulating work. Some of the most popular jobs, however, generally pay low wages and involve physically demanding work. These occupations include janitors and cleaners, home health and home care aides, maids and housekeepers, and laborers. Financial necessity, not the desire for intellectual stimulation or social networks, likely keeps workers at these jobs into old age.

Table 3 reports the 30 occupations with the highest shares of workers age 65 or older between 2003 and 2007. Overall, 12.0 percent of all workers in these occupations are age 65 or older, compared with 3.6 percent of all workers in the economy. Adults age 65 or older make up about 31 percent of funeral service workers, the occupation with the highest share of older workers. Additionally, more than one in five workers employed as crossing guards, farmers and ranchers, and models, demonstrators, and product promoters are age 65 or older. Other occupations in which older adults make up more than 9 percent of the workforce include tax preparers, clergy, property managers, real estate brokers, and bus drivers. Many of the 30 occupations in table 3 are relatively small, so these occupations account for only about 13 percent of all older workers in the labor force.[2]

[2] Table 3 excludes occupations with fewer than 10,000 workers (of all ages).

Table 3. Thirty Occupations With The Highest Share of Workers Ages 65 and Older, 2003-2007

Rank	Occupation	Share of Workforce Ages 65+	No. of Employees Ages 65+	Total No. of Employees (all ages)	Share of U.S. Workers Ages 65+ in Occupation	Share of All U.S. Workers in Occupation (all ages)
1	Funeral service workers	31.4%	4,438	14,135	0.1%	0.0%
2	Crossing guards	27.7%	13,421	48,452	0.3%	0.0%
3	Farmers and ranchers	25.7%	177,383	690,207	3.4%	0.5%
4	Models, demonstrators, and product promoters	23.1%	16,472	71,309	0.3%	0.0%
5	Funeral directors	16.3%	8,202	50,318	0.2%	0.0%
6	Tax preparers	14.3%	20,144	140,870	0.4%	0.1%
7	Farm, ranch, and other agricultural managers	13.2%	27,485	208,221	0.5%	0.1%
8	Barbers	13.0%	13,515	103,962	0.3%	0.1%
9	Tool grinders, filers, and sharpeners	11.6%	1,640	14,136	0.0%	0.0%
10	Clergy	11.4%	46,724	409,856	0.9%	0.3%
11	Property, real estate, and community association managers	11.4%	69,557	610,149	1.3%	0.4%
12	Animal trainers	11.4%	5,102	44,756	0.1%	0.0%
13	Fire inspectors	11.1%	1,776	15,996	0.0%	0.0%
14	Tailors, dressmakers, and sewers	10.5%	10,095	96,143	0.2%	0.1%
15	Ushers, lobby attendants, and ticket takers	9.9%	4,760	48,082	0.1%	0.0%
16	Real estate brokers and sales agents	9.5%	92,465	973,320	1.8%	0.7%
17	Agricultural inspectors	9.5%	1,710	17,999	0.0%	0.0%
18	Musicians, singers, and related workers	9.4%	18,041	191,927	0.3%	0.1%
19	Entertainment attendants and related workers	9.3%	15,785	169,735	0.3%	0.1%
20	Bus drivers	9.1%	51,987	571,287	1.0%	0.4%
21	Directors, religious activities and education	9.0%	4,764	52,932	0.1%	0.0%
22	Precision instrument and equipment repairers	8.9%	5,771	64,847	0.1%	0.0%
23	Actors	8.9%	3,347	37,612	0.1%	0.0%
24	Parking lot attendants	8.6%	6,907	80,310	0.1%	0.1%
25	Job printers	8.6%	5,805	67,495	0.1%	0.0%
26	Taxi drivers and chauffeurs	8.4%	25,114	298,974	0.5%	0.2%
27	Dentists	8.4%	14,604	173,859	0.3%	0.1%
28	Tour and travel guides	8.1%	2,702	33,356	0.1%	0.0%
29	Forest and conservation workers	8.1%	1,512	18,664	0.0%	0.0%
30	Security guards and gaming surveillance officers	7.9%	68,145	862,590	1.3%	0.6%
	30 Occupations with the highest share of workers age 65+	12.0%	739,374	6,181,501	12.9%	4.3%
	All Other Occupations	3.2%	4,442,808	137,777,369	85.7%	95.7%
	Grand Total	3.6%	5,182,182	143,958,870	100.0%	100.0%

Source: Authors' computations from the 2003-2007 March Current Population Surveys.

Note: Estimates are annual averages over the period 2003 to 2007, excluding the Armed Forces. Rankings exclude miscellaneous occupations and those with fewer than 10,000 employees.

Benefits of Working Longer

The aging of the boomers poses serious challenges to the economy and government finances. The growing size of the older population will increase the number of older Americans who qualify for publicly financed retirement and health benefits in coming years, relative to the number of younger adults who typically work and pay taxes. If current employment patterns persist, the Social Security actuaries project the number of workers per retiree will decrease from 3.3 to 2.2 over the next 22 years (Social Security Board of Trustees 2008). The drop in the ratio of workers to retirees threatens living standards, Social Security and Medicare financing, and funding for all other government programs.

If more boomers were to delay retirement, however, the economy could produce more goods and services, boosting living standards for both workers and non-workers and generating additional tax revenue to fund all kinds of government services. For example, if men age 55 or older in 2020 increased their employment rates to those that prevailed in 1950, about two-thirds of the expected increase between 2000 and 2020 in the old-age dependency ratio—the number of retirees each worker must support—would disappear (Johnson and Steuerle 2004).

Working longer enhances individuals' financial well-being in several ways. Those who delay retirement can raise their retirement incomes by avoiding early retirement reductions to their Social Security and defined benefit (DB) pension benefits. They can also accumulate more Social Security and pension credits and other savings and reduce the number of retirement years that their financial assets must support. By working until age 67 instead of retiring at age 62, for example, a typical worker could gain about $10,000 in annual income at age 75, net of federal income taxes and health insurance premiums (Butrica et al. 2004). Delaying retirement may also

promote physical and emotional health by keeping older adults active and engaged and giving their lives meaning (Calvo 2006).

Why Boomers Will Want to Work Longer

Recent economic, social, and demographic trends suggest that boomers may be willing to work longer than previous generations. Improved health and declines in physical job demands leave older people better able to work today than in the past. Between 1982 and 2004 the share of adults ages 55 to 64 reporting fair or poor health declined from 27 to 18 percent (National Center for Health Statistics 2006). Many studies have concluded that poor health is an important predictor of early retirement (Blau and Gilleskie 2001; Bound et al. 1998; Dwyer and Mitchell 1999; McGarry 2004). Additionally, work has generally become less physically strenuous, making many jobs more suitable for older adults. Between 1950 and 1996, for example, the share of jobs that require frequent lifting or carrying of objects weighing more than 25 pounds declined from 20 to 8 percent (Steuerle, Spiro, and Johnson 1999).

Social Security changes have increased work incentives at older ages. The normal retirement age (NRA) for full Social Security benefits recently increased from 65 to 66 and will reach 67 for those born after 1959. For those retiring early, these changes reduce replacement rates—the portion of lifetime earnings replaced by Social Security—thereby making continued work necessary to maintain living standards in retirement. Delayed retirement credits have been raised to increase the return from taking up benefits after the NRA. In addition, in 2000, Congress repealed the earnings test that reduced Social Security benefits for employed recipients older than the NRA who earned more than a limited amount. An earnings test that is more

stringent than the test previously applied to beneficiaries older than the NRA remains in place for beneficiaries between age 62 and the NRA.

Changes in employer-provided pension and retiree health benefits are also likely to encourage boomers to remain at work. Traditional DB pensions, which provide workers with lifetime retirement annuities usually based on years of service and earnings near the end of the career, discourage work at older ages. They often provide substantial subsidies for early retirement and penalize workers who remain on the job past the plan's normal retirement age because workers who delay retirement by a month forfeit a month of benefits. There is substantial evidence that workers in fact respond to the retirement incentives embedded in DB pension plans (Stock and Wise 1990).

Over the past 30 years, however, employers have been shifting from traditional DB pensions to defined contribution (DC) plans, which do not encourage early retirement. Between 1975 and 2006 the share of private-sector workers participating in DB plans declined from 39 to 20 percent, while the share participating in DC plans increased from 15 to 43 percent (Bureau of Labor Statistics 2007b; Pension and Welfare Benefits Administration 1998). Employers typically make specified contributions into individual DC accounts, which workers may access at retirement, generally as lump sum withdrawals. Because contributions continue as long as plan participants remain employed and workers with a given account balance can receive the same present value of lifetime benefits regardless of when they chose to begin collecting benefits, DC plans do not penalize work at older ages. Friedberg and Webb (2005) estimate that differences in retirement incentives cause people with DC plans to work about two years longer on average

than DB participants. The continuing shift to DC plans will likely further increase older Americans' labor supply.

The erosion in employer-provided retiree health benefits is also likely to limit early retirement. Retiree health insurance that pays health expenses for early retirees who have not reached the Medicare eligibility age of 65 discourages work by reducing retirement costs that arise from the loss of employer health benefits. Workers offered retiree health benefits by their employers retire earlier than workers who lose their health benefits when they leave the firm (Blau and Gilleskie 2001; Johnson, Davidoff, and Perese 2003; Rogowski and Karoly 2000). Rising health care costs and the introduction of an accounting rule in 1993 requiring employers to recognize on their balance sheets the full liability of future retiree health costs have led many employers to terminate their retiree health plans. In 2005, only 33 percent of employers with more than 200 employees offered retiree health benefits, down from 68 percent in 1988 (Kaiser Family Foundation and Health Research Educational Trust 2005).

Several surveys suggest that many boomers intend to work into old age, perhaps in response to these various forces. For example, 68 percent of older workers in one recent poll said they intended to work in retirement (AARP 2003). Another AARP poll found that 38 percent of older workers want to phase in to retirement gradually instead of leaving the labor force abruptly (AARP 2005b). A recent MetLife survey found that boomers are increasingly concerned about their ability to afford retirement. Between 2001 and 2005, the share of boomers who reported that they would have enough money to retire before age 65 fell from 56 to 34 percent and the share never planning to retire increased from 7 to 17 percent (MetLife Mature Market Institute 2005).

Do Employers Want Older Workers?

While boomers appear willing to work longer, employment outcomes also depend on labor demand. If employers are less keen on hiring and retaining older workers, then increased willingness to work among older adults may only modestly increase their employment rates and could reduce their wages as they compete for the scarce jobs available to them. Employer demand for older workers depends on perceptions of older employees' productivity and the costs of employing them.

Productivity of older workers

Older workers may be more productive than younger workers because of their greater experience in the labor market and lower rates of absenteeism (Martocchio 1989), but their education and skills may be outdated and declining health may impair their ability to complete physically demanding tasks. Health concerns may be particularly problematic for workers with limited education, because they are more likely to work in physically demanding jobs and develop more health problems as they begin to age than more educated workers (Johnson, Mermin, and Murphy 2007; Johnson, Mermin, and Resseger 2007).

Employers may also have concerns about older workers' cognitive ability, as some research suggests that skills involving on-the-spot reasoning ability, independent of past experience, decline with age. For example, numerical ability and the capacity to master new material peak at age 35 and then erode over time (Avolio and Waldman 1994; Verhaeghen and Salthouse 1997). However, cognitive skills such as verbal ability that rely on accumulated knowledge—known as crystallized intelligence—do not appear to decline with age (Horn and

Cattell 1966). Acquired knowledge, enhanced communication skills, and sharper decision-making abilities can offset age-related declines in mental efficiency. For example, one study found that older hotel reservation clerks were more productive than their younger colleagues, even though they handled fewer calls, because their superior communications skills generated more bookings per call (McNaught, Barth, and Henderson 1989).

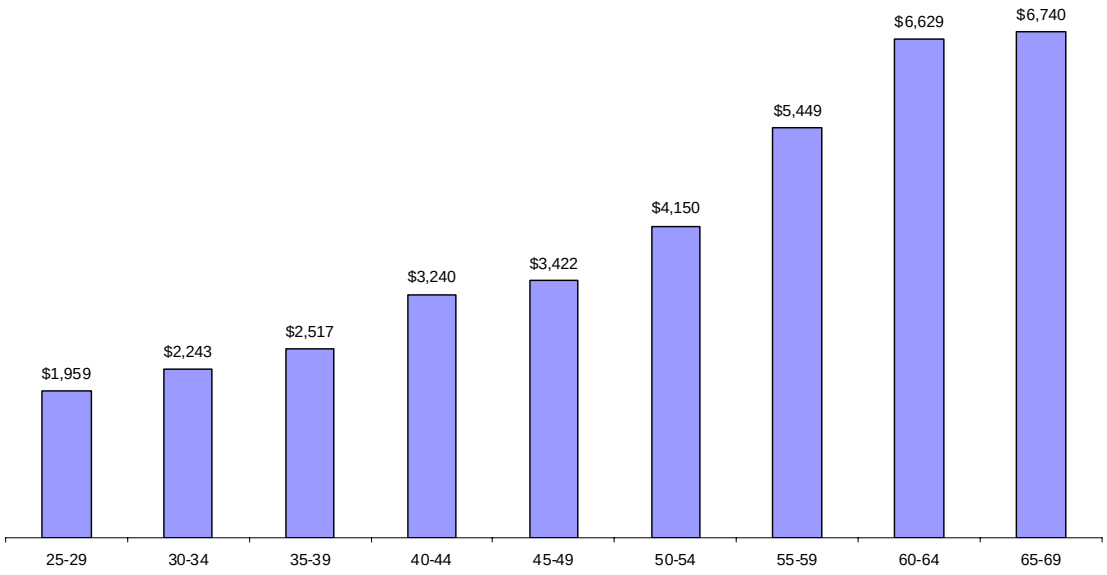
Cost of older workers

Employers may view older workers as more expensive than their younger counterparts. It is well known that wages increase with age, up to about the mid-50s (Mincer 1974). For example, median usual weekly earnings in 2004 for full-time wage and salary workers increased from $406 at ages 20 to 24, to $604 at ages 25 to 34, to $743 at ages 45 to 54 (Bureau of Labor Statistics 2007a). However, wages grow relatively slowly after the early-40s. Median wages in 2004 for full-time workers was only about 4 percent higher at ages 45 to 54 than at ages 35 to 44, and they were lower at ages 55 to 64 than at ages 45 to 54. Employers are likely to tolerate older workers' relatively high salaries when age-related productivity gains are the reason wages rise as workers grow older. However, managers may view older workers as too costly at firms in which wage growth is driven by seniority pay scales and are only loosely tied to productivity differentials, such as in unionized settings and the public sector.

Fringe benefit costs also rise with age. The cost of traditional DB pension plans rises rapidly as workers approach the plan's retirement age and can soon begin collecting benefits. Although these plans are becoming less common, they continue to cover all federal government employees, about 79 percent of state and local government workers, and about 20 percent of private-sector workers (Bureau of Labor Statistics 2007b, 2008b). Because older workers use

more health services than younger workers, the cost to employers of providing health benefits generally increases with age. Mean annual health expenditures in 2005 were more than 50 percent higher for adults ages 55 to 59 than those ages 45 to 49 and were about twice as high at ages 60 to 64 (figure 1). In dollar terms, however, the differences were modest. For example, the difference in mean health expenditures between adults ages 55 to 59 and adults ages 45 to 49 was only about $2000.[3]

Figure 1. Average Annual Health Care Expenditures by Age, 2005



Source: Authors' calculations from Medical Expenditure Panel Survey

[3] Because older workers are on average healthier than older adults who are not working, health care expenditures vary more by age for all adults than for workers.

Employer attitudes towards older workers

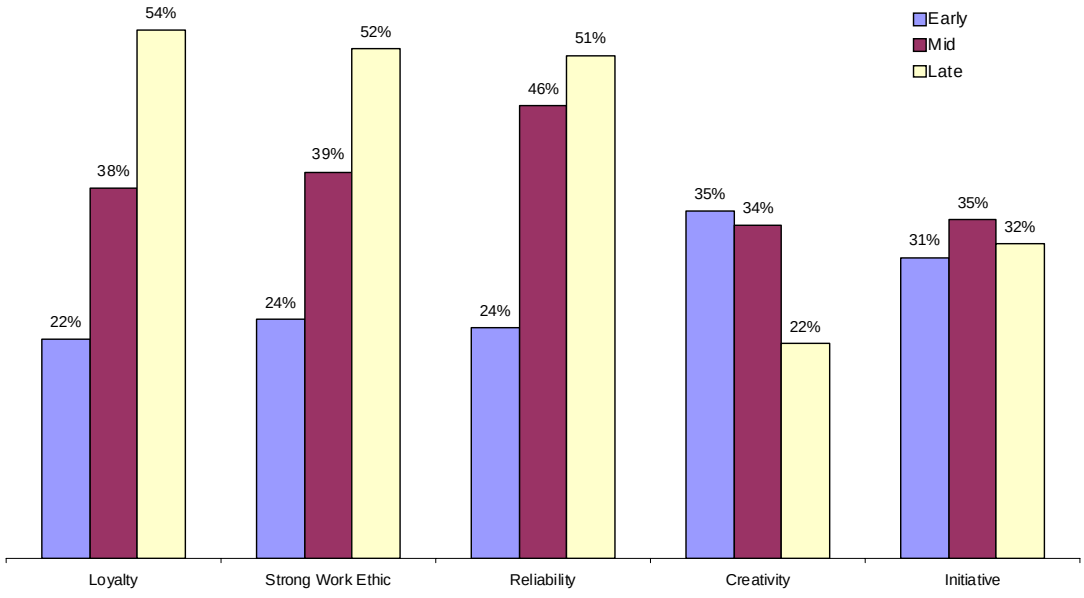
One way to assess how employers weigh the costs and benefits of employing older workers is to examine attitudinal surveys. Table 4 summarizes a number of recent surveys on employer attitudes toward older workers. Most employer surveys indicate that firms generally value older workers' knowledge and experience, reliability, and work ethic. For example, a 2006 survey of 578 private-sector firms with 50 or more employees by the Center on Aging and Work at Boston College found that a majority of employers (between 50 and 54 percent) said it was "very true" that their late-career employees were "loyal to the company," had "a strong work ethic," were "reliable," and had "low turnover rates" (figure 2). In comparison, less than one-quarter of employers said that each of these attributes applied to early-career employees. Additionally, about 47 percent of employers said it was very true that late-career employees had "high levels of skills relative to what is needed for their jobs," compared with 38 percent of mid-career employees and 21 percent of early-career employees. Because late-career employees have many years of experience in their positions, however, it is not clear from these survey results how employers view older workers with more limited experience. A number of state and national surveys sponsored by AARP have also found that employers view knowledge and experience, work ethic, and dependability as advantages of employing older workers (table 4).

Other employer surveys indicate that many managers believe that older workers benefit the firm. In a 2006 internet-based survey of 487 organizations by Buck Consultants, 88 percent of respondents said that mature workers' knowledge provided very significant business advantages, and 74 percent said their reliability and dedication were very significant advantages (Buck Consultants 2007). In another 2006 survey of 400 private-sector employers by the Center for Retirement Research at Boston College, more than four of five managers said that older

Table 4. Employer Surveys on Attitudes Towards Older Workers

Sponsor	Sample	Year	Advantage of Older Workers As Reported by Employers	Employer Concerns about Older Workers	Reference
AARP	400 U.S. employers	1998	Work ethic, experience, knowledge, and stability	Less flexible, averse to change, and reluctant to learn new technologies	AARP (2000)
AARP	679 midwestern employers	2005	Knowledge and work ethic	Less flexibility, health problems, lower productivity	AARP (2005a)
AARP	685 employers in upstate New York	2005	Experience, reliability, work ethic	Unwillingness to change	AARP (2005c)
AARP	437 employers in New Mexico	2006	Experience and dependability	Set in ways	AARP (2007c)
Buck Consultants	487 U.S. employers (internet survey)	2006	Knowledge, reliability, and dedication provide significant business advantage	Integrating multiple generations of workers and accomodating part-time and flexible schedules	Buck Consultants (2007)
Center on Aging & Work / Workplace Flexibility at Boston College	578 U.S. employers	2006	View older workers as loyal, reliabile, hard working, less likely to leave, and highly skilled	Reluctance to travel or try new technologies	Pitt-Catsouphes et al. (2007)
Center for Retirement Research at Boston College	400 U.S. employers	2006	Knowledge and ability to interact with customers ehnaces their productivity	View older workers as more costly particularly among employers with fewer workers ages 55+	Munnell, Sass, and Soto (2006)
Louis Harris Associates	406 corporate members of the Conference Board	1991	Positive attitude and skills	Higher health costs and less suitable for training	Barth, McNaught, and Rizzi (1993)

Figure 2. Percentage of Employers Attributing Trait to Workers, by Career Stage



Source: Pitt-Catsouphes et al. (2007)

workers' "knowledge of procedures and other aspects of the job" and their "ability to interact with customers" substantially enhanced their productivity (Munnell, Sass, and Soto 2006).

These surveys also indicate, however, that employers often question older workers' creativity, flexibility, and willingness to learn new things. Only about 29 percent of employers in the Center on Aging and Work survey described their late-career employees as creative, compared with 34 percent of mid-career employees and 35 percent of early-career employees (figure 2). Employers in the AARP surveys cited inflexibility and resistance to change as the primary disadvantages of employing older workers. In the Center for Retirement Research survey, more than one in five employers cited older workers' limited ability to learn new tasks quickly as an important factor in reducing their productivity. About one-third noted older workers' limited physical health and stamina, and nearly one-fifth expressed concerns about how long older workers would remain on the job. Employers in the Buck Consultants survey expressed concern about the risks of integrating multiple generations of workers and of accommodating older workers' part-time and flexible schedules.

Overall, most employers appear to consider older workers to be at least as productive as younger workers. The Center for Retirement Research survey found that 56 percent of employers reported that older professionals and managers were more productive than their younger counterparts (Munnell, Sass, and Soto 2006). Only 6 percent of employers reported that older white-collar workers were less productive than younger ones, while 39 percent said that they were equally productive. Views toward older rank-and-file workers were not quite as positive: 41 percent said they were more productive than their younger counterparts and 19 percent said they were less productive. The share of employers who reported that older workers were more

productive than younger ones increased as the share of their workforce age 55 and older increased. This pattern suggests that older workers often make favorable impressions on employers, although employers predisposed toward older workers may simply be more likely to hire them. Survey respondents who were age 55 or older themselves were also more likely to describe older workers as especially productive.

Many American employers express concerns about the cost of employing older workers, however. In the Center for Retirement Research survey, 39 percent of employers said that older white-collar workers were more costly than their younger counterparts, and 43 percent said that older rank-and-file workers were more costly (Munnell, Sass, and Soto 2006), probably because older workers are typically more experienced. Only 19 percent said that older professionals and managers were less costly than younger ones, and only 18 percent said that older rank-and-file workers were less costly. Large employers and those with DB pension plans were especially likely to view older workers as relatively expensive to employ. Employers expressed particular concern about older workers' health care costs. For example, 36 percent of human resources executives in a 1991 survey said that high health care costs influenced their decision about hiring and retaining older workers (Barth, McNaught, and Rizzi 1993). In the more recent Buck Consultants (2007) survey, 39 percent cited health care expenses as highly significant factors in the cost of employing older workers. Some research suggests that employers' concerns about health costs do affect hiring decisions. A study using data from the 1980s and early 1990s found that employers with health care plans were less likely to hire workers ages 55 to 64 than those without plans (Scott, Berger, and Garen 1995).

Most employers appear to believe that the relatively high productivity of older workers offsets their relatively high costs. Two-thirds of employers surveyed by the Center for Retirement Research said an employee or prospect age 55 or older was neither more nor less attractive than a younger person capable of the same job (Munnell, Sass, and Soto 2006). This assessment held for both professional and managerial workers and rank-and-file workers. The survey results also showed, however, that older professional and managerial workers have better prospects for continuing their careers than rank-and-file workers. While 23 percent of employers reported that older professionals and managers were more attractive than younger ones, only 15 percent favored older rank-and-file workers over younger ones.

Although relatively few employers admit having negative views about employing older workers, that finding does not necessarily imply that most employers are eager to hire them. In fact, one-quarter of employers in the Center on Aging and Work survey said that their organizations were reluctant to hire older workers (Pitt-Catsouphes et al. 2007). Similarly, a follow-up to the Center on Retirement Research survey found that employers were lukewarm about accommodating their employees who would like to work beyond traditional retirement ages (Eschtruth, Sass, and Aubry 2007).

Employer practices towards older workers

Examining actual employer practices towards older workers provides additional insight into the demand for older workers. If employers are currently trying to retain older workers and are providing them with training and fairly evaluating older job applicants, this may suggest that they will be willing to employ the swelling ranks of older adults in the future.

What employers are doing to attract or retain older workers

Some analysts have suggested that employers can better attract or retain older workers by offering them opportunities for phased retirement, a gradual transition into full retirement that provides flexible work schedules or reduced hours and job responsibilities (Brown and Schieber 2003; Mulvey and Nyce 2004; Penner, Perun, and Steuerle 2002; and Rappaport 2001). Reduced schedules, perhaps in conjunction with access to pension income, would be more attractive than full retirement for many older workers. In a recent AARP survey, 38 percent of workers expressed interest in phased retirement, and 78 percent of those interested said these programs would encourage them to stay in the labor force longer (AARP 2005b). Case studies have identified a number of techniques some employers are using to allow workers to phase into retirement, such as part-time hours, flexible work schedules, job sharing, telecommuting, and shifting older workers to mentoring roles (Eyster, Johnson, and Toder 2008). But so far employers actually offer these types of arrangements only to a limit extent.

Some recent surveys have examined the extent to which employers are taking steps to retain older workers (table 5). Many firms report they are concerned about losing talent when the baby boomers retire. In a series of AARP state surveys of about 400 to 700 employers, between 55 and 73 percent reported that they were likely to experience a shortage of qualified workers in the next five years. Similarly, an Ernst & Young survey of 151 Fortune 1000 companies found that 62 percent of employers believe that future retirements will lead to labor or skill shortages. However, fewer employers (between 19 and 37 percent) are taking active steps to prepare for boomer retirements, according to the same AARP surveys and a nationally representative survey of 400 employers by the Center on Aging and Work.

Table 5. Employer Surveys on Policies to Retain Older Workers

Sponsor	Sample	Year	Findings	Reference
AARP	407 employers in greater Boston area	2006	55% of employers expect to face a shortage of qualified workers within the next 5 years, but only 19% are taking steps to prepare for boomer retirements. 42% of employers offer phased retirement and 83% of those offering do so informally.	AARP (2006)
AARP	514 employers in California with at least 50 employees	2006	73% of employers foresee a shortage of qualified workers within the next 5 years, and 26% offer phased retirement.	AARP (2007b)
AARP	400 employers across New York state with 20 or more full-time employees	2006	61% of employers expect to face a shortage of qualified workers within the next 5 years, but only 23% are taking steps to prepare for boomer retirements. 38% of employers offer phased retirement and 94% of those offering do so informally.	AARP (2007d)
AARP	679 midwestern employers	2005	58% of employers expect to face a shortage of qualified workers within the next 5 years. 38% offer phased retirement. Health care organizations, professional service firms, and retailers were more likely to phased retirement than manufacturers and educational organizations.	AARP (2005a)
AARP	400 employers in Orgeon		67% of employers believe a shortage of qualified workers within the next 5 years is likely, but only 36% are taking steps to prepare for boomers retirements. 53% offer phased retirement, and 94% of these employers offer phased retirement only on an informal basis.	AARP (2007a)
Center on Aging & Work / Workplace Flexibility at Boston College	Weighted survey of 578 U.S. employers	2006	Over 25% of employers offer phased retirement and 37% report they have adopted strategies (to a moderate or great extent) to retain workers beyond the normal retirement age.	Pitt-Catsouphes et al. (2007)
Center for Retirement Research at Boston College	Nationaly representative sample of 400 employers	2006	Employers expect half of their 50+ workers will need to work at least two years beyond traditional retirement ages and are lukewarm about accommodating half of those who need to work longer. Employers expecting growth, those expressing concern about losing institutional knowledge, and those with more older workers were more likely to say they would accommodate older workers who wanted to stay on. Firms that were concerned about costs and those experiencing slower technological change were less willing to accommodate.	Eschtruth, Sass, and Aubry (2007)
Cornell University	National sample of 950 establishments with 20 or more workers with at least two white-collar employees ages 55+	2001-2002	68% of establishments would allow phased retirement; 36% of these employers employed phased retirees in the past three years. Of establishments allowing phased retirement, more than 76% reported it would be an informal arrangement. Establishments that were part of large parent organizations, in the public sector (excluding education and social services), highly unionized, or less likely to employ part-time workers were less likely to offer phased retirement.	Hutchens (2003)
Ernst & Young	151 Fortune 1000 companies	2007	62% say forecasted retirement will likely lead to labor and skill shortages and 29% are considering phased retirement programs	Ernst & Young (2007)
William H. Mercer	232 U.S. employers	2001	23% of employers offer formal phased retirement programs. 59% rehire retirees.	Rappaport (2001)
Watson Wyatt WorldWide	586 firms most with between 1000 and 4999 employees	1999	16 % of employers offer phased retirement; the rate is 36% in the educational sector.	Watson Wyatt (1999)

Many employers do report a willingness to allow phased retirement, but fewer actually do so. According to a nationally representative survey of 950 employers conducted by the School of Industrial and Labor Relations at Cornell University, 73 percent of employers indicated that "something could be worked out" if a full-time white collar worker age 55 or older asked to switch to part-time work. Employers were less likely to allow phased retirement if they were part of large parent organizations, highly unionized, in the public sector (excluding education or social services), less dependent on part-time employees, or more dependent on older workers. Only 36 percent of employers reporting they would allow older white collar workers to reduce their hours, however, had any phased retirees in the last three years. Other surveys suggest employers may be less likely to offer phased retirement to blue-collar than to white-collar employees. The AARP and Center on Aging and Work surveys, which did not specifically ask about white-collar workers, found that 23 to 42 percent of employers offer phased retirement.

While many employers are willing to offer older workers the opportunity to reduce their hours, fewer are willing to offer additional inducements such as full health benefits or in-service pension benefits (access to pension income while working). For example, in the Cornell survey only 26 percent of employers allowing phased retirement would provide the same health benefits to workers once they reduced their hours. About two-fifths of employers allowing phased retirement in the Cornell survey, and only 9 percent of employers in the Ernst & Young survey, would allow in-service pension benefits.

Federal regulations limit the ability of employers to offer in-service pension benefits with phased retirement. Until recently the Internal Revenue Code and the Employee Retirement Income Security Act (ERISA) forbade DB pensions from paying benefits to employees before

separation unless they had reached the plan's normal retirement age. The Pension Protection Act (PPA) of 2006 facilitated in-service distributions by allowing plans to pay benefits to current employees starting at age 62. To date, however, few employers appear to have amended their pension plans. According to the Ernst & Young survey, only 10 percent of employers have started allowing in-service distribution of pension benefits in response to the PPA.

Currently, most phased retirement opportunities are informal arrangements, not formal programs. Seventy-six percent of employers reporting they would allow phased retirement in the Cornell survey said these arrangements would be informal, as did 83 percent of such employers in the AARP Boston survey and 94 percent of them in the AARP Oregon and New York surveys.

This preference for *ad hoc* arrangements may reflect a desire to retain only the most valuable older workers or workers in jobs most amenable to part-time work. Formal policies that selectively offer phased retirement could potentially violate provisions of the Internal Revenue Code and ERISA that forbid pension plans from favoring highly compensated employees (Penner, Perun, and Steuerle 2002). Employers also express concern that formal phased retirement programs may expose them to Age Discrimination in Employment Act (ADEA) lawsuits, as claims under this statute continue to be broad (Brown and Scheiber 2003). Phased retirement programs might be interpreted as violating the ADEA because they treat one group of older workers differently from another group, solely on the basis of age. Even when employers believe they are operating within the law, the threat of lawsuits may be enough to deter them from adopting formal phased retirement plans.

Training and older employees

Employers' willingness to train older workers may offer some insight into their interest in retaining them. To remain productive workers must continuously maintain and update their skills, especially when technology is changing rapidly. Training activities, however, are costly. Expenses include both the opportunity cost of training—training activities take time away from the production of goods and services—and the direct cost of trainers' time and related equipment. While economic theory suggests that employees may pay some training costs through reduced wages, empirical evidence suggests employers pay most training costs (Neal 1995; Parent 1999; Parsons 1972; Topel 1991). An important factor affecting employers' decisions to train workers is workers' expected tenure with the employer. The longer workers stay on the job, the more time employers have to recoup training costs. Turnover rates are lower for older workers than their younger counterparts, but older workers still have fewer expected remaining years with their employers than younger workers because they have fewer remaining work years before retirement (Farber 1999).

Evidence from the 1990s suggests employers are less likely to provide training for older workers than for younger workers. Frazis et al.(1998) report 1995 survey data showing that 51 percent of workers ages 55 and older in large and medium-sized establishments received formal employer-sponsored training during the previous 12 months, compared with 79 percent of those ages 25 to 34, 75 percent of those ages 35 to 44, and 65 percent of those ages 45 to 54. Older workers also receive less intensive training. According to the same survey, workers ages 55 and older averaged 17 hours of informal on-the-job training between May and October, 1995, compared with 30 hours for those ages 35 to 44 and 39 hours for those ages 44 to 54.

Age discrimination

Another way of assessing employers' enthusiasm for older workers is to examine how employers treat older workers in employment decisions. On the surface, there appears to be little direct evidence that older workers fare worse in the labor market than younger workers. As noted earlier, older workers receive higher earnings than younger workers. They also exhibit lower unemployment rates. The annual unemployment rate in 2007 was 3.1 percent at ages 55 to 64, compared with 3.7 percent at ages 25 to 54 (Bureau of Labor Statistics 2008a). Additionally, job loss rates are lower for workers ages 55 to 64 than for younger workers (Farber 2005), although the protective effect of age disappears when the analysis accounts for job tenure (Munnell, Sass, Sato, and Zhivan 2006), suggesting that newly hired older workers face roughly the same job displacement risk as newly hired younger workers. Older workers who do lose their jobs, however, experience longer unemployment spells than their younger counterparts. In 2006, 28 percent of unemployed adults ages 55 to 64 were unemployed for at least 27 weeks, compared with just 26 percent of those ages 25 to 34 and 20 percent of those ages 35 to 44 (Bureau of Labor Statistics 2007c). In addition, a recent study found that earnings losses among displaced workers in Connecticut who were re-employed increase sharply with age (Couch, Jolly, and Placzek forthcoming).

Although national employment and earnings statistics indicate that older workers generally fare at least as well as their younger counterparts, many workers seem to believe that employers favor younger workers and that age discrimination is pervasive. In a 2005 survey of 800 adults working or looking for work, 36 percent said that employers treated older workers less fairly than younger workers and 71 percent said that older workers were more likely to be laid off (Reynolds, Ridley, and Van Horn 2005). Overall 60 percent of workers ages 45 to 74

responding to a 2002 survey said they felt older workers were the first to go when employers cut back their workforces (AARP 2002). Two-thirds of the same group of respondents said they believed workers face age discrimination in the workplace, based on what they had experienced or seen.

However, fewer workers said they experienced age discrimination themselves. For example, only 7 percent of employed men ages 45 to 73 reported work-related age discrimination between 1966 and 1980 (Johnson and Neumark 1997). Only 13 percent of adult workers in a 2005 survey reported being treated unfairly by their employers because of their age (Reynolds, Ridley, and Van Horn 2005).

Quasi-experimental studies provide additional evidence that some older workers face discrimination. An early study investigated how employers might treat older workers by examining how a sample of *Harvard Business Review* subscribers said they would react to hypothetical management situations (Rosen and Jerdee 1977). The researchers mailed questionnaires to study participants asking how they would handle different scenarios if they were managers, such as dealing with an underperforming employee, allocating training opportunities, and making promotion decisions. Rosen and Jerdee compared responses for scenarios that involved younger workers (age 32) and those that involved older workers (age 61). The results suggest that managers generally perceive older workers as less flexible and more resistant to change than younger workers and that they are reluctant to promote older workers to jobs requiring flexibility, creativity, and high motivation. The study also found that managers are less inclined to support career development and training for older workers. A follow-up study

completed in 1995 using similar methods also revealed managerial bias against older workers, particularly older women (Rosen and Jerdee 1995).

Other experimental evidence focused on the actual hiring process. Lahey (2005) sent resumes to nearly 4,000 firms in the Boston and St. Petersburg, Florida areas and compared responses for younger and older workers. The resumes, which were faxed in pairs in response to employment ads for entry-level jobs, were identical except for the age of the job applicant, which varied from 35 to 62. Lahey found that resumes from younger women (age 35 or 45) generated significantly more positive responses than those from older women (age 50, 55, or 62). Prospective employers in Massachusetts contacted 9.2 percent of the younger women with a positive-sounding response (but not necessarily an interview offer), compared with only 7.7 percent of the older women. They offered interviews to 5.3 percent of the younger women but only 3.8 percent of the older women. Results were similar for Florida. These findings are not necessarily evidence of age discrimination. Resumes reported only 10-year job histories for both younger and older job applicants, and employers may have drawn negative inferences from the short job histories for older applicants. Nonetheless, these findings do suggest that employers prefer younger women over older women in hiring decisions, at least for less-skilled entry-level jobs.

In conclusion, many employers appear to have mixed feelings about retaining older workers. They see older workers as experienced, reliable, hard working, and productive, but are concerned about the cost of employing them and about their adaptability and willingness to learn new things. Many employers appear willing to offer phased retirement, but only to some

employees and generally without benefits. Employers are less likely to train older workers and experimental evidence suggests age discrimination still exists.

How Is the Demand for Older Workers Changing?

Although employers may not fully embrace older workers today, their views may change over time as boomers age. The changing nature of work and mounting demographic pressures could increase demand for older workers.

Changing nature of work

Technological change and globalization have transformed the U.S. economy over the past 40 years. A major change has been the shift from manufacturing goods to providing services. Between 1971 and 2007 the share of workers in blue-collar occupations fell from about 36 percent to about 24 percent, while the share of workers in management, the professions, and services increased substantially (table 6). This shift has greatly affected the nature of work.

Table 7 shows the share of workers in occupations involving various physical, cognitive, and other demands in 1971 and 2007. The shares were calculated by linking occupational characteristics from the Employment and Training Administration to workers in the Current Population Survey, a large household survey of the civilian non-institutionalized population.[4] We classified workers as facing a given job demand if the demand was very or extremely important to job performance, according to the ETA rankings.

[4] This table updates Johnson, Mermin, and Resseger (2007), which provides methodological details.

Table 6. Percentage of Workers in Different Occupations, 1971, 1983, 1990, 2000, and 2007

	1971	1983	1990	2000	2007
All Workers	100.0	100.0	100.0	100.0	100.0
Management and Business	9.7	12.1	13.0	14.3	14.3
Professionals	13.3	16.8	17.5	19.5	20.3
Computer and Mathematical Occupations	0.3	n/a	n/a	n/a	2.2
Architecture and Engineering	2.4	n/a	n/a	n/a	1.9
Life, Physical, and Social Sciences	0.6	n/a	n/a	n/a	1.0
Community and Social Services	0.8	n/a	n/a	n/a	1.5
Legal	0.6	n/a	n/a	n/a	1.1
Education, Training, and Library	4.7	n/a	n/a	n/a	5.8
Arts, Design, Entertainment, Sports, and Media	1.0	n/a	n/a	n/a	1.9
Healthcare Practitioners and Technical Occupations	2.7	n/a	n/a	n/a	4.7
Services	14.9	15.9	15.4	15.2	16.9
Healthcare Support	1.3	n/a	n/a	n/a	2.2
Protective Service	1.4	n/a	n/a	n/a	2.0
Food Preparation and Services	4.3	n/a	n/a	n/a	5.6
Building and Grounds Cleaning and Maintenance	4.8	n/a	n/a	n/a	3.7
Personal Care and Services	3.1	n/a	n/a	n/a	3.3
Sales	10.4	11.3	11.6	11.5	11.5
Office and Administrative Support	15.4	16.2	16.1	14.9	13.4
Blue Collar	36.3	27.8	26.4	24.6	23.6
Farming, Fishing, and Forestry	2.5	1.1	0.9	0.9	0.7
Construction and Extraction	5.8	6.4	6.1	5.6	6.8
Installation, Maintenance, and Repair	4.8	3.8	3.7	3.5	3.4
Production	15.2	9.2	8.8	8.4	6.6
Transportation and Material Moving	8.0	7.3	7.0	6.3	6.1

Source: Figures for 1971 and 2007 are authors' computations based on the March Current Popluation Survey. Data for 1983, 1990, and 2000 are from the BLS website.

Notes: Due to changes in occupational classifcation systems over time, consistent data on employment by detailed occupation is not available. We are able to calculate employment by detailed occupation in 1971 only because occupations in the 1971 March CPS have been coded under multiple systems.

The nature of work has changed markedly over the last 35 years. Jobs have become less physically demanding and are less likely to entail difficult working conditions. Between 1971 and 2007 the share of jobs involving high physical demands (such as strength, bending, or reaction time) declined from 8.0 to 6.6 percent and the share involving any physical demands (high physical demands or more moderate demands like standing, walking, and repetitive motion) declined from 54.2 to 44.9 percent. In relative terms, the share of jobs with physical demands fell by about 17 percent over the 35-year period. Similarly, the proportion of jobs with

Table 7. Percentage of Workers Facing Job Demands in 1971 and 2007

Job Demand	1971	2007	Percentage Change
High Physical Demands	8.0	6.6	-17.5
Any Physical Demands	54.2	44.9	-17.2
High Cognitive Ability	26.5	36.0	35.8
Some Cognitive Ability	57.5	68.0	18.3
Interpersonal Skills	25.4	35.4	39.4
Dealing with Unpleasant People	4.1	8.2	100.0
High Stress	4.4	9.2	109.1
Any Stress	39.4	42.7	8.4
Updating and Using Knowledge	11.5	19.1	66.1
Difficult Working Conditions	39.8	29.8	-25.1
N	60,433	103,789	

Source: Authors' calculations based on the March 1971 and March 2007 Current Population Surveys matched to the Occupational Information Network (O*NET), a comprehensive database of job characteristics produced by Employment and Training Administration.
Notes: All differences between 1971 and 2007 were statistically significant ($p < .05$).

difficult working conditions (such as outdoor work, high noise levels, and exposure to contaminants) fell from 39.8 to 29.8 percent.

While jobs have become less physically demanding over time, nonphysical demands have increased. Between 1971 and 2007 the share of jobs requiring high cognitive ability (such as reasoning, written expression, and decision making) and strong interpersonal skills grew from about one-quarter to more than one-third, a relative increase of over 35 percent. Over the same period the proportion of jobs involving high stress and requiring dealing with unpleasant people more than doubled. And the share of workers whose jobs involved continually updating and using relevant knowledge increased from 11.5 to 19.1 percent.

The true long-term decline in physical job demands and increase in cognitive and other nonphysical demands has probably been more dramatic than these estimates indicate. The analysis assumes that job requirements have not changed within detailed occupations. Instead, the trends we observe arise solely from the employment shift from physically demanding occupations. In reality, of course, requirements for certain occupations have also changed over time. As a result of technological advancements, for example, some manufacturing jobs now rely less on workers' physical strength than in the past and more on workers' ability to operate machinery and computers.

Will the nature of work continue changing?

To determine whether the trend away from physical job demands to cognitive demands and stress is likely to continue, we examined the characteristics of the occupations that the Bureau of Labor Statistics (BLS) predicts will grow the fastest over the next 10 years. Information technology, personal care services, financial, and medical occupations top the list of the fastest-growing jobs (table 8). Table 9 shows the characteristics of the 100 occupations that BLS projects will grow the fastest over the next 10 years. (Appendix table 1 reports the 100 fastest-growing occupations.) BLS projects that these occupations will grow by 24 percent between 2006 and 2016, compared with 6 percent for all other occupations. The fast-growing occupations employed 21 percent of all workers in 2007 and the projections imply that their share will increase to 24 percent by 2017.

The fast-growing occupations have very different characteristics than slow-growing occupations. Workers in the fast-growing occupations are much better educated than workers in other occupations, with 43 percent of their workers college graduates, compared with 26 percent

Table 8. Twenty Fastest Growing Occupations

Occupation	Employment, 2007	Projected Change 2006-2016 (%)	Share of Occupation's Workforce Ages 55+ (%)
Network systems and data communications analysts	382,356	53.4	5.7
Personal and home care aides	794,846	50.7	23.4
Personal financial advisors	343,170	40.9	18.8
Computer software engineers	869,358	37.8	9.1
Medical assistants	153,079	35.5	11.9
Veterinarians	66,824	35.5	22.4
Financial analysts	83,177	33.5	15.8
Commercial divers	10,256	33.3	0.0
Dental hygienists	154,575	29.9	11.0
Database administrators	94,436	29.4	8.7
Dental assistants	295,078	29.3	5.8
Computer systems analysts	277,001	29.0	13.9
Nursing, psychiatric, and home health aides	2,054,082	28.2	15.4
Physical therapist assistants and aides	74,098	28.0	4.3
Sales representatives, services, all other	598,020	27.8	12.4
Miscellaneous community and social service specialists	329,074	27.7	14.0
Network and computer systems administrators	178,344	27.2	7.3
Physical therapists	263,178	27.2	9.3
Miscellaneous personal appearance workers	230,296	26.4	7.3
Health diagnosing and treating practitioner support technicians	435,786	26.0	6.4
All 522 Occupations	153,751,169	10.0	16.6

Source: Authors' computations from Bureau of Labor Statistics (2006) and Current Population Survey.
Note: Share of workers ages 55+ is the average for 2003-2007.

of workers in other occupations. The fast growing occupations appear to offer more job flexibility, as 17 percent of workers in these occupations work part-time, compared with only 13 percent of workers in other occupations.

Job demands also differ between the fast-growing and other occupations. The rapidly growing occupations are far less physically demanding and far less likely to involve difficult working conditions than slower-growing jobs. Only 18 percent of fast-growing jobs require any physical demands, compared with 52 percent of other occupations.

Table 9. Characteristics of the Hundred Fastest Growing Occupations

	Top 100 Occupations	All Other Occupations
Percent of All Employment in 2007	21.0	79.0
Projected 10-Year Growth (%)	23.7	6.4
Percent of All Employment in 2017	24.0	76.0
Percent of Workers with Given Characteristic		
Age 55+	16.7	16.1
Education		
Less Than High School	6.4	12.6
High School Graduate	20.6	33.1
Some College	29.8	28.5
College Graduate	43.3	25.8
Working Part-Time	17.1	13.1
Job Demands		
High Physical Demands	1.7	7.9
Any Physical Demands	17.7	52.1
High Flexibility and Dexterity	1.0	7.6
High Cognitive Ability	56.9	30.4
Any Cognitive Ability	87.0	63.0
Computer Use	51.4	36.9
Interpersonal Skills	54.0	30.5
Deals With Unpleasant People	7.1	8.5
High Stress	13.0	8.1
Any Stress	42.5	42.7
Updating and Using Knowledge	34.7	14.9
Demanding Working Conditions	10.8	34.9

Source: Authors' computations from Bureau of Labor Statistics (2006), the Employment and Training Administration's Occupational Information Network, and Current Population Survey.
Note: Age, education, and part-time status are averages for 2003-2007.

While less physically demanding, the fast-growing occupations impose more cognitive and other nonphysical demands, are more stressful, require more interpersonal skills, and are more likely to require the latest skills than slow growing occupations. High cognitive ability is very or extremely important for 57 percent of workers in fast-growing occupations, compared

with 30 percent for workers in other occupations. About 13 percent of workers in fast growing occupations, but only 8 percent of workers in other occupations, work under high stress. Interpersonal skills are very or extremely important to performance for 54 percent of workers in the fast-growing occupations, compared with 31 percent of workers in other occupations. Thirty-five percent of workers in fast growing occupations must update and use relevant knowledge, compared with 15 percent of workers in other occupations. The characteristics of the fast growing occupations suggest that the long-term trend away from physical job demands to cognitive and other nonphysical job demands is likely to continue.

Changing characteristics of older adults

While the nature of work has been changing, ongoing shifts in the characteristics of older adults might also affect employer demand for older workers. As work has become more cognitively demanding, older adults have become more educated. Between 1971 and 2007, the share of adults ages 55 to 74 with a four-year college degree has increased from 9 to 27 percent (table 10). As a result, since 1980 the education gap between prime-age and older adults has narrowed. In 1980 the share of adults with college degrees was 10 percentage points higher at ages 30 to 54 than at ages 55 to 74. By 2007, this difference had narrowed to 4.5 percentage points. Projecting forward, educational attainment among adults of all ages will continue to increase, but at a much slower rate than over the past few decades. The share of adults ages 55 to 74 who have a college degree is projected to rise to 31 percent by 2027, and the attainment gap relative to adults ages 30 to 54 is projected to increase modestly.[5]

[5] Projections are based on DYNASIM3, the Urban Institute's microsimulation model. See Favreault and Smith (2004) for information about the model.

Table 10. Percentage of Adults with Four-Year College Degrees by Age, 1971-2027

	30-54	55-74
1971	13.2	8.8
1980	21.1	10.8
1990	26.2	15.5
2000	28.7	20.9
2007	31.4	26.9
2017	34.8	28.6
2027	36.7	31.0

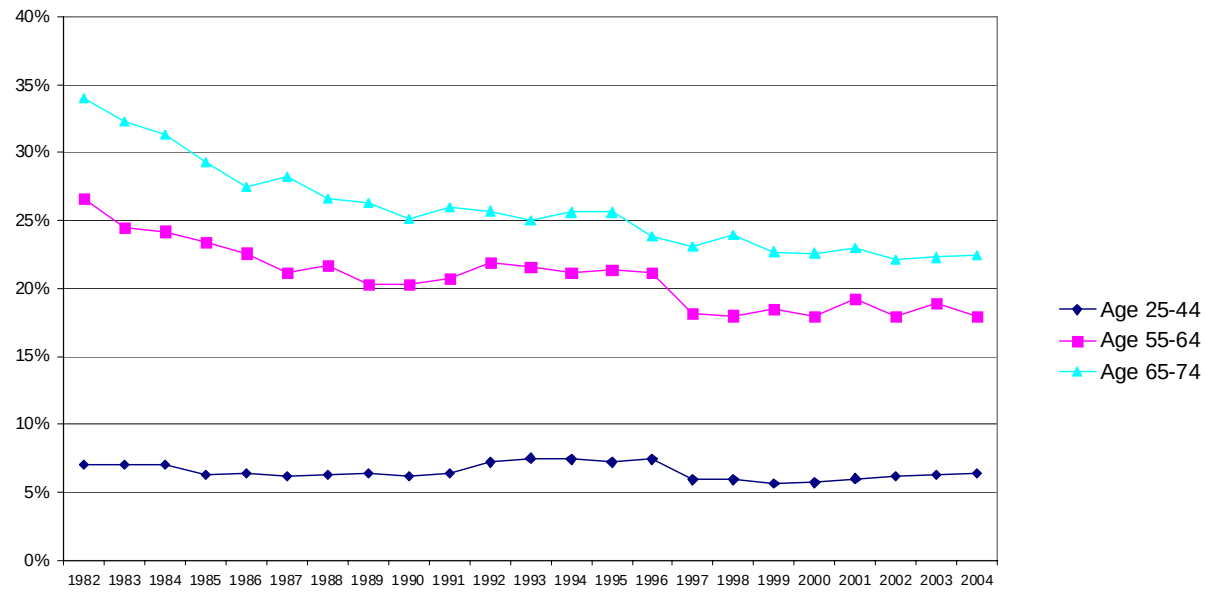
Source: Authors' calculations from Current Population Survey for 1971-2007. Projections for 2017 and 2027 are from the Urban Institute's DYNASIM3.

As jobs have been becoming less physically demanding over time, older adults have been getting healthier. Between 1982 and 2004 the share of adults ages 55 to 74 who report poor or fair health declined markedly, while the share of younger adults reporting poor or fair health was stagnant (figure 3). Health gains at older ages, however, have slowed since the mid-1990s, and rising obesity and diabetes rates may presage future health declines (Centers for Disease Control and Prevention 2005, 2006).

Slower labor force growth and demand for older workers

The retirement of the baby boomers is likely to reduce labor force growth significantly. According to BLS projections (Toosi 2006), the labor force will grow by only 0.5 percent per year from 2005 to 2020, far less than the 1.0 percent annual growth that occurred between 1990 and 2005. The slowdown in the average annual growth rate will be even more striking for the

Figure 3. Share of Older Adults Reporting Fair or Poor Health, 1982-2004



Source: National Center for Health Statistics (2006)

prime-age labor force (ages 25 to 54), which will fall from 1.0 percent over the past 15 years to just 0.1 percent for the next 15 years.

Although slower labor force growth could pose problems for the economy and employers, it could be good news for older workers. Many analysts argue that slower labor force growth will result in a shortage of prime-age workers, potentially increasing demand for older workers as employers look for new sources of labor (Aspen Institute 2003; CED 1999; Ellwood 2001; Mulvey and Nyce 2004; Nyce and Schieber 2001). Increased demand might raise wages and employment rates for older workers. Labor market prospects might improve most strongly for highly educated older workers, as future growth in educational attainment slows.

This argument, however, may be overly optimistic for older workers. Some researchers question whether slower domestic labor force growth will really result in tighter labor markets

for prime-age workers. They argue that an increase in global labor supply, which U.S. firms can tap through outsourcing or immigration, will more than make up for any slowdown in the domestic labor force (Cappeli 2005; Freeman 2007). The emergence of China, India, and nations from the former Soviet Union in the world economy may have doubled the supply of workers worldwide. If the expected shortage in prime-age workers does not materialize, employers may face fewer incentives to turn to older workers.

Even if population aging raises employer demand for older workers, the almost certain increase in the *supply* of older workers could limit any advantages for older adults. The substantial increase in the share of the workforce over age 55 in the coming years could lead to a glut of older workers despite the overall labor force slowdown (Sapozhnikov and Triest 2007). Too many older workers could result in lower wages and employment rates at older ages.

Older adults' labor market outcomes will depend largely on whether employers view older and prime-age workers as close substitutes for each other. If employers cannot easily use older workers to do the work once done by younger workers, then a shortage of prime-age workers is not likely to increase demand for older workers very much. Instead, the increasing relative supply of older workers will push down older workers' wages more if employers cannot use them as well as younger workers. Research on the baby boomer's experiences in the labor market suggests that workers are not perfectly substitutable by age. The entrance of the large boomer cohort into the workforce depressed the relative wages of younger workers (Berger 1989; Welch 1979). Recent research suggests that the larger boomer cohorts have earned lower relative wages throughout their careers (Sapozhnikov and Triest 2007). Still, workers are clearly substitutable to a significant degree and a reduction in the relative supply of one age group

Table 11. Twenty Occupations with Highest Share of Workers Ages 55 and Older

Occupation	Employment, 2007	Share of Occupation's Workforce Ages 55+ (%)	Projected 10-Year Growth (%)
Motor vehicle operators, all other	50,903	62.4	11.8
Funeral service workers	11,585	56.9	14.3
Mathematicians	1,812	55.4	0.0
Animal breeders	372	52.3	0.0
Farmers and ranchers	764,433	50.5	(8.4)
Paperhangers	7,355	45.2	(10.0)
Tax preparers	172,046	41.2	(8.0)
Models, demonstrators, and product promoters	79,751	41.0	17.8
Crossing guards	55,410	39.2	2.9
Funeral directors	22,689	39.1	10.3
Shoe machine operators and tenders	13,636	37.6	(25.0)
Financial examiners	5,307	36.8	7.7
Drilling and boring machine tool setters, operators,and tenders	447	35.9	(23.3)
Librarians	218,887	33.2	3.8
Tool and die makers	106,092	33.0	(9.9)
Religious workers, all other	109,127	32.5	20.5
Woodworkers, all other	29,949	32.4	5.0
Audio-visual collections specialists	18,375	32.0	(14.3)
Education, training, and library workers, all other	18,236	32.0	11.1
Instructional coordinators	24,165	32.0	23.3
20 Oldest Occupations	1,710,576	43.4	(1.7)
All 522 Occupations	153,751,169	10.0	16.6

Source: Authors' computations from Bureau of Labor Statistics (2006) and Current Population Survey.
Note: Share of workers ages 55+ is the average for 2003-2007.

should increase demand for other age groups (Hamermesh 1993). Moreover, older and prime-age workers may have become more substitutable for each other over time as educational and health differences between them have narrowed and physical job demands declined.

Which occupations offer the best opportunities for working longer?

Regardless of whether mounting demographic pressures generally increase demand for older workers, certain occupations are likely to provide better opportunities than others for working longer. Occupations with large shares of older workers might provide the best opportunities for

working longer because they will soon need to replace many retirees. But many occupations with large shares of older workers are concentrated in declining industries and therefore are projected to grow slowly or even decline over the next ten years (table 11). Older workers are likely to find favorable opportunities, however, in occupations that are both aging and projected to grow quickly. Table 12 lists the 20 fastest growing occupations among those with above-average shares of workers ages 55 and older. Major occupations include home health aides, nurses, postsecondary teachers, social workers, management analysts, and counselors. (See Appendix

Table 12. Twenty Fastest-Growing Occupations among Those with Above-Average Share of Workers Ages 55 and Older

Occupation	Employment, 2007	Projected 10-Year Growth (%)	Share of Occupation's Workforce Ages 55+ (%)
Personal and home care aides	794,846	50.7	23.4
Personal financial advisors	343,170	40.9	18.8
Veterinarians	66,824	35.5	22.4
Social and community service managers	340,736	24.6	24.4
Miscellaneous entertainment attendants and related workers	163,717	23.8	21.1
Surveyors, cartographers, and photogrammetrists	42,128	23.6	16.9
Environmental scientists and geoscientists	102,766	23.6	20.2
Registered nurses	2,608,762	23.4	17.9
Animal trainers	45,072	23.3	23.0
Instructional coordinators	24,165	23.3	32.0
Locksmiths and safe repairers	25,047	23.1	25.4
Postsecondary teachers	1,357,642	22.8	27.0
Archivists, curators, and museum technicians	56,396	22.2	24.7
Social workers	728,481	22.2	17.5
Management analysts	662,978	22.0	26.5
Pharmacists	229,830	21.8	21.4
Counselors	707,527	21.4	18.2
Business operation specialists, all other	100,367	20.9	18.8
Brokerage clerks	3,831	20.5	29.5
Religious workers, all other	109,127	20.5	32.5
All 522 Occupations	153,751,169	10.0	16.6

Source: Authors' computations from Bureau of Labor Statistics (2006) and Current Population Survey.
Note: Share of workers ages 55+ is the average for 2003-2007.

Table 2 for the complete list of fast growing occupations with large shares of older workers.) As in fast-growing occupations generally, workers in these occupations are better educated, have more opportunities for part-time work, and face fewer physical job demands but greater cognitive and other nonphysical demands (table 13).

Table 13. Characteristics of 98 Occupations with Above-Average Growth and Above-Average Share of Workers Ages 55 and Older

	Old and Fast-Growing Occupations	All Other Occupations
Percent of All Employment in 2007	27.4	72.6
Projected 10-Year Growth (%)	16.4	7.6
Percent of Workers with Given Characteristic		
Age 55+	21.6	14.7
Education		
Less Than High School	6.8	13.0
High School Graduate	21.6	33.8
Some College	26.2	29.7
College Graduate	45.4	23.5
Working Part-Time	17.6	12.6
Job Demands		
High Physical Demands	7.0	6.4
Any Physical Demands	33.0	49.4
High Flexibility and Dexterity	0.3	8.4
High Cognitive Ability	50.7	30.5
Any Cognitive Ability	72.7	66.2
Computer Use	52.2	35.3
Interpersonal Skills	47.5	30.9
Deals With Unpleasant People	6.4	8.9
High Stress	12.1	8.1
Any Stress	34.6	45.7
Updating and Using Knowledge	27.4	16.0
Demanding Working Conditions	14.6	35.5

Source: Authors' computations from Bureau of Labor Statistics (2006), the Employment and Training Administration's Occupational Information Network, and Current Population Survey.
Note: Age, education, and part-time status are averages for 2003-2007.

Conclusions and Policy Implications

Working longer would improve boomers' retirement security as well as help the economy and government finances. Trends in public and private retirement benefits and health improvements suggest boomers are likely to want to work longer. Employer attitudes towards retaining older workers are more complicated. Surveys show that employers value older workers' experience, reliability, work ethic, and productivity, but employers also express concerns about the cost of employing older workers and about their creativity, flexibility, willingness to learn new things, and physical abilities. Perhaps as many as 70 percent of employers are willing to offer phased retirement to retain older workers, but most only offer that option to select employees and usually the offer comes without health benefits or access to pension income. Although older workers are paid more than younger workers and may be less likely to be laid off, experimental evidence suggests some employers may still discriminate on age in hiring decisions and survey evidence from the 1990s finds they are less likely to train older than younger workers.

While employer perceptions of the value of older workers are mixed, employment prospects for them may nonetheless be improving. Physical job demands have declined over time and health status has improved at older ages, potentially reducing employers' concerns about older workers' physical abilities. Older adults are now better educated than in the past, as cognitive job demands have increased. The shift from DB to DC pensions has reduced the cost of employing older workers. Employers' perceptions of older workers are more favorable in workplaces with relatively high concentrations of older workers, which will become more common as the workforce ages. Employers may be increasingly likely to train older workers if

they believe older employees are now more likely to delay retirement. Finally, slower growth in the prime-age labor force may increase demand for older workers in coming years.

For other reasons, however, future demand for older workers remains uncertain. The increasing cognitive nature of work may exacerbate employer concerns about older workers' skills. An increased global labor supply may more than offset the increase in demand for older workers resulting from a projected slowdown in domestic prime-age labor force growth. Even if total demand for workers located in the United States remains high, the increasing numbers of older workers may push down their wages and employment rates if employers do not see them as perfect substitutes for prime-age workers.

For the boomer cohorts, employment prospects could differ greatly between well-educated and less-educated older workers. Slower growth in educational attainment among all adults, combined with increasing cognitive job demands, may raise wages for highly educated older workers even if average wages for all older workers remain stagnant or decline. Although many highly educated boomers may not need to work longer for financial reasons, their extended employment would boost the economy and generate tax revenue for government. In contrast, less-educated older workers have poorer future prospects. They are generally in worse health than their more educated counterparts and often work in more physically demanding jobs (Johnson, Mermin, and Resseger 2007). The workplace trend towards greater cognitive demands works against adults with limited schooling, who may find it more to difficult to update their knowledge and skills for a changing job market. The slowdown in U.S. labor force growth may not transfer into more demand for services of low-skilled older workers if employers are able to tap immigrants or overseas labor for similar work.

Weaker demand for less-educated older workers would create significant barriers to improving their living standards because these are the workers who could gain the most from delaying retirement. Although Social Security replaces a higher share of earnings for low-wage retirees than high-wage retirees, many people with limited education struggle to get by in retirement (Butrica and Zedlewski 2008). One recent study found that by delaying retirement and working one additional year, older adults in the bottom fifth of the lifetime earnings distribution could increase their annual retirement income by 16 percent, compared with only 7 percent for workers in the top fifth of the distribution (Butrica, Smith, and Steuerle 2006).

To promote employment at older ages, policymakers might consider the following steps to increase demand for older workers:

- *Make Medicare the Primary Payer for Workers with Employer-Provided Health Insurance*. Federal law establishes employer-sponsored health insurance as the primary payer of health care costs for active workers age 65 and older. Medicare becomes secondary coverage, paying only for services not covered by the employer plan that are included in the Medicare benefits package. Medicare secondary payer rules add thousands of dollars per year to the cost of employing each older worker at firms that offer health insurance.
- *Reduce Legal Uncertainties Surrounding Formal Phased Retirement Programs*. Some employers cite concerns about violating highly complicated pension and age discrimination laws as a barrier to offering formal phased retirement programs. Policymakers could reduce uncertainty by passing legislation detailing the parameters of phased retirement plans that would not violate pension law or the Age Discrimination in Employment Act.

- *Allow In-Service Distribution of DB Pensions at Age 59 and One-Half.* Another barrier to phased retirement is the federal regulation prohibiting active employees from receiving pension benefits before age 62. Policymakers could reduce the age at which in-service distribution could start to 59 and one-half, the age at which employees can potentially access their DC pensions and individual retirement accounts.
- *Better Target Government Training and Employment Services to Older Workers*. Keeping skills up-to-date is particularly important for older work yet employers are less likely to train older workers and government training programs primarily focus on younger, low-wage workers. Policymakers could increase older workers' access to training and re-employment services as well as tailor programs to their specific needs, such as learning the latest computer skills. Additionally the Employment and Training Administration could update research it conducted in the mid-1990s on employer training practices. The research is the best information available on the extent to which employers train older workers but may now be outdated as the boomers approach retirement.
- *Take Steps to Increase Employer Awareness of the Value of Older Workers*. In Arizona, for example, the governor's Advisory Council on Aging has launched a public education campaign on the value of older workers (Arizona Governor's Advisory Council on Aging 2006). Similarly, the Arkansas Department of Workforce Services has teamed with AARP to improve awareness and appreciation of older workers by developing relationships with the public workforce system, chambers of commerce, national and local training providers, trade associations, labor unions,

community organizations, policymakers, and business leaders (Arkansas Department of Workforce Services 2007).

Beyond this, policymakers will have to confront the possibility that labor market developments could exacerbate income inequalities within the cohort of boomers as they reach retirement age. The evidence in this paper suggests that job growth for highly educated workers in occupations that require cognitive skills will remain strong. Consequently, the increased educational attainment of the baby boomer cohorts relative to earlier cohorts, combined with the slowdown in overall labor force growth, could make them more attractive to employers than earlier cohorts of older workers, while prospects for less educated workers worsen. Even as more older workers delay retirement and contribute to the economy and tax base, others may become even more dependent on Social Security and other income-support programs.

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Appendix Table 1. Hundred Fastest Growing Occupations

Occupation	Employment 2007	10-Year Growth	Share of Occupation's Workforce Ages 55+ (%)
Network systems and data communications analysts	382,356	53.4	5.7
Personal and home care aides	794,846	50.7	23.4
Personal financial advisors	343,170	40.9	18.8
Computer software engineers	869,358	37.8	9.1
Medical assistants	153,079	35.5	11.9
Veterinarians	66,824	35.5	22.4
Financial analysts	83,177	33.5	15.8
Commercial divers	10,256	33.3	0.0
Dental hygienists	154,575	29.9	11.0
Database administrators	94,436	29.4	8.7
Dental assistants	295,078	29.3	5.8
Computer systems analysts	277,001	29.0	13.9
Nursing, psychiatric, and home health aides	2,054,082	28.2	15.4
Physical therapist assistants and aides	74,098	28.0	4.3
Sales representatives, services, all other	598,020	27.8	12.4
Miscellaneous community and social service specialists	329,074	27.7	14.0
Network and computer systems administrators	178,344	27.2	7.3
Physical therapists	263,178	27.2	9.3
Miscellaneous personal appearance workers	230,296	26.4	7.3
Health diagnosing and treating practitioner support technicians	435,786	26.0	6.4
Environmental engineers	29,887	25.9	11.9
Physician assistants	89,144	25.8	11.1
Gaming managers	4,794	25.0	12.7
Rock splitters, quarry	21,587	25.0	9.4
Communications equipment operators, all other	13,448	25.0	8.4
Gaming services workers	118,237	24.8	13.9
Customer service representatives	2,083,570	24.8	11.1
Securities, commodities, and financial services sales agents	394,603	24.7	14.6
Social and community service managers	340,736	24.6	24.4
Occupational therapist assistants and aides	18,413	24.2	12.6
Computer and information scientists, research	214,307	24.0	13.9
Miscellaneous entertainment attendants and related workers	163,717	23.8	21.1
Surveyors, cartographers, and photogrammetrists	42,128	23.6	16.9
Environmental scientists and geoscientists	102,766	23.6	20.2
Preschool and kindergarten teachers	686,229	23.6	13.4
Respiratory therapists	97,611	23.5	15.0
Registered nurses	2,608,762	23.4	17.9
Instructional coordinators	24,165	23.3	32.0
Animal trainers	45,072	23.3	23.0
Occupational therapists	87,149	23.2	7.0
Locksmiths and safe repairers	25,047	23.1	25.4
Bill and account collectors	213,795	23.0	11.5
Counter and rental clerks	210,085	22.9	14.8
Postsecondary teachers	1,357,642	22.8	27.0

(continued)

Appendix Table 1. (continued)

Occupation	Employment 2007	10-Year Growth	Share of Occupation's Workforce Ages 55+ (%)
Paralegals and legal assistants	356,508	22.3	10.0
Archivists, curators, and museum technicians	56,396	22.2	24.7
Actuaries	37,008	22.2	6.4
Social workers	728,481	22.2	17.5
Management analysts	662,978	22.0	26.5
Pharmacists	229,830	21.8	21.4
Biomedical engineers	4,081	21.4	2.6
Counselors	707,527	21.4	18.2
Business operation specialists, all other	100,367	20.9	18.8
Advertising sales agents	254,796	20.6	14.5
Brokerage clerks	3,831	20.5	29.5
Religious workers, all other	109,127	20.5	32.5
Technical writers	52,612	20.4	21.8
Massage therapists	142,569	20.3	10.6
Directors, religious activities and education	57,443	20.2	28.2
Tour and travel guides	39,943	20.0	26.7
Radiation therapists	17,603	20.0	9.2
Market and survey researchers	191,068	19.9	13.4
Meeting and convention planners	42,444	19.6	18.1
Medical scientists	179,759	19.6	12.2
Miscellaneous vehicle and mobile equipment mechanics and installers	85,168	19.5	7.0
Emergency medical technicians and paramedics	166,389	19.4	5.4
Lifeguards, ski patrol, and other recreational protective service	73,992	19.3	13.5
Security and fire alarm systems installers	44,039	19.3	12.0
Transportation inspectors	45,405	19.2	23.1
Clergy	441,637	19.1	32.0
Industrial engineers, including health and safety	171,250	18.9	14.4
Recreation and fitness workers	328,717	18.6	12.1
Cost estimators	114,652	18.6	22.5
First-line supervisors/managers of gaming workers.	144,964	18.5	18.5
Surveying and mapping technicians	93,892	18.4	11.8
Construction and building inspectors	88,247	18.2	26.1
Ambulance drivers and attendants, except emergency medical technicians	16,320	18.2	21.1
Miscellaneous media and communication workers	85,231	18.2	18.1
Logisticians	50,020	18.1	15.3
Combined food preparation and serving workers,including fast food	380,693	18.1	13.9
Civil engineers	425,101	18.0	22.4
Detectives and criminal investigators	130,193	17.9	9.1
Child care workers	1,507,003	17.9	16.1
Nonfarm animal caretakers	116,018	17.8	10.0
Grounds maintenance workers	1,288,435	17.8	11.1
Human resources, training, and labor relations specialists	783,268	17.8	17.1
Models, demonstrators, and product promoters	79,751	17.8	41.0
Accountants and auditors	1,962,256	17.7	17.7
Public relations specialists	151,051	17.7	14.3

(continued)

Appendix Table 1. (continued)

Occupation	Employment 2007	10-Year Growth	Share of Occupation's Workforce Ages 55+ (%)
Correspondence clerks	3,999	17.6	25.2
Medical records and health information technicians	89,127	17.6	15.4
Residential advisors	73,493	17.5	14.5
Architects, except naval	241,287	17.5	16.7
Ushers, lobby attendants, and ticket takers	42,050	17.5	22.8
Hotel, motel, and resort desk clerks	140,442	17.4	9.9
First-line supervisors/managers of landscaping and lawn services	261,266	17.3	14.0
Private detectives and investigators	91,162	17.3	19.9
Diagnostic related technologists and technicians	271,706	17.3	12.9
Receptionists and information clerks	1,579,674	17.2	19.2
Broadcast and sound engineering technicians and radio operators	64,038	17.1	9.0
All 522 Occupations	153,751,169	10.0	16.6

Source: Authors' computations from Bureau of Labor Statistics (2006) and Current Population Survey.
Note: Share of workers ages 55+ is the average for 2003-2007.

Appendix Table 2. Occupations with Above Average Growth and Above Average Share of Workers Ages 55+

Occupation	Employment 2007	10-Year Growth	Share of Occupation's Workforce Ages 55+ (%)
Personal and home care aides	794,846	50.7	23.4
Personal financial advisors	343,170	40.9	18.8
Veterinarians	66,824	35.5	22.4
Social and community service managers	340,736	24.6	24.4
Miscellaneous entertainment attendants and related workers	163,717	23.8	21.1
Surveyors, cartographers, and photogrammetrists	42,128	23.6	16.9
Environmental scientists and geoscientists	102,766	23.6	20.2
Registered nurses	2,608,762	23.4	17.9
Animal trainers	45,072	23.3	23.0
Instructional coordinators	24,165	23.3	32.0
Locksmiths and safe repairers	25,047	23.1	25.4
Postsecondary teachers	1,357,642	22.8	27.0
Archivists, curators, and museum technicians	56,396	22.2	24.7
Social workers	728,481	22.2	17.5
Management analysts	662,978	22.0	26.5
Pharmacists	229,830	21.8	21.4
Counselors	707,527	21.4	18.2
Business operation specialists, all other	100,367	20.9	18.8
Brokerage clerks	3,831	20.5	29.5
Religious workers, all other	109,127	20.5	32.5
Technical writers	52,612	20.4	21.8
Directors, religious activities and education	57,443	20.2	28.2
Tour and travel guides	39,943	20.0	26.7
Meeting and convention planners	42,444	19.6	18.1
Transportation inspectors	45,405	19.2	23.1
Clergy	441,637	19.1	32.0
Cost estimators	114,652	18.6	22.5
First-line supervisors/managers of gaming workers.	144,964	18.5	18.5
Construction and building inspectors	88,247	18.2	26.1
Miscellaneous media and communication workers	85,231	18.2	18.1
Ambulance drivers and attendants, except emergency medical technicnicians	16,320	18.2	21.1
Civil engineers	425,101	18.0	22.4
Human resources, training, and labor relations specialists	783,268	17.8	17.1
Models, demonstrators, and product promoters	79,751	17.8	41.0
Accountants and auditors	1,962,256	17.7	17.7
Correspondence clerks	3,999	17.6	25.2
Architects, except naval	241,287	17.5	16.7
Ushers, lobby attendants, and ticket takers	42,050	17.5	22.8
Private detectives and investigators	91,162	17.3	19.9
Receptionists and information clerks	1,579,674	17.2	19.2
Security guards and gaming surveillance officers	970,829	17.0	21.6
Appraisers and assessors of real estate	152,441	16.8	25.7

(continued)

Appendix Table 2. (continued)

Occupation	Employment 2007	10-Year Growth	Share of Occupation's Workforce Ages 55+ (%)
Miscellaneous mathematical science occupations	3,044	16.7	23.7
Medical and health services managers	536,896	16.4	21.7
Cargo and freight agents	24,794	16.3	20.3
Ship and boat captains and operators	35,757	16.2	19.0
Artists and related workers	201,833	16.1	23.9
Construction managers	1,150,201	15.8	18.6
First-line supervisors/managers of personal service workers	123,783	15.3	22.9
Property, real estate, and community association managers	581,338	15.2	31.6
Psychologists	204,780	15.1	31.4
Urban and regional planners	34,736	14.7	17.6
First-line supervisors/managers, protective serviceworkers, all other	74,622	14.6	22.2
Janitors and cleaners, except maids andhousekeeping cleaners	1,049,909	14.5	23.6
Subway and streetcar operators	13,218	14.3	24.1
Funeral service workers	11,585	14.3	56.9
Aircraft structure, surfaces, rigging, and systems assemblers	10,287	14.3	18.8
Traffic technicians	5,680	14.3	19.0
Food preparation and serving related workers,all other	3,664	14.3	21.9
Physicians and surgeons	855,314	14.2	22.9
Licensed practical and licensed vocational nurses	559,758	14.0	17.5
Sales and related workers, all other	233,435	13.9	24.7
Other healthcare practitioner and technical occupations	48,876	13.5	23.4
Clinical laboratory technologists and technicians	335,461	13.5	16.8
Writers and authors	188,005	13.3	25.9
Precision instrument and equipment repairers	65,928	13.2	22.4
Aircraft pilots and flight engineers	119,384	13.1	21.6
Insurance sales agents	537,075	12.8	26.1
First-line supervisors/managers of housekeeping and janitorial workers	299,935	12.8	23.5
Elementary and middle school teachers	3,061,352	12.7	18.8
Lodging managers	164,042	12.7	27.1
Taxi drivers and chauffeurs	328,747	12.7	26.0
Maids and housekeeping cleaners	1,594,716	12.7	18.6
Office clerks, general	1,120,546	12.6	18.0
Other teachers and instructors	806,617	12.6	20.3
Building cleaning workers, all other	1,180,407	12.5	23.6
Human resources managers	256,003	12.5	18.1
First-line supervisors/managers of correctional officers	48,323	12.5	21.6
Retail salespersons	3,798,841	12.4	17.4
Bookkeeping, accounting, and auditing clerks	1,497,058	12.4	25.6
Health diagnosing and treating practitioners,all other	7,355	12.3	20.7
Education administrators	802,796	12.0	26.8
Motor vehicle operators, all other	50,903	11.8	62.4

(continued)

Appendix Table 2. (continued)

Occupation	Employment 2007	10-Year Growth	Share of Occupation's Workforce Ages 55+ (%)
Administrative services managers	112,595	11.7	25.6
Small engine mechanics	69,090	11.5	20.9
Actors	18,365	11.4	17.6
Transportation workers, all other	14,614	11.4	19.0
Human resources assistants, except payroll and time keeping	61,353	11.3	18.1
Education, training, and library workers, all other	18,236	11.1	32.0
Atmospheric and space scientists	5,154	11.1	19.6
Musicians, singers, and related workers	188,956	11.0	23.2
Lawyers	1,063,102	10.9	24.2
Real estate brokers and sales agents	1,179,966	10.6	31.3
Bus drivers	614,738	10.4	31.7
Funeral directors	22,689	10.3	39.1
Baggage porters, bellhops, and concierges	71,926	10.1	17.0
Bakers	175,771	10.1	16.8
Maintenance and repair workers, general	442,721	10.1	20.5
All 522 Occupations	153,751,169	10.0	16.6

Source: Authors' computations from Bureau of Labor Statistics (2006) and Current Population Survey.
Note: Share of workers ages 55+ is the average for 2003-2007.